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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,223	12/15/2003	Venkat Selvamanickam	1014-SP165-US	3138

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EXAMINER	
TALBOT, BRIAN K	

ART UNIT	PAPER NUMBER
1792	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/736,223	SELVAMANICKAM, VENKAT	
	Examiner	Art Unit	
	Brian K. Talbot	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 April 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/27/09 has been entered.

2. The amendment filed 10/30/08 has been considered and entered. Claim 6 has been canceled. Claims 1-5 and 7-19 remain in the application.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

4. Claims 1-5,8-13,15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weismann et al. (6,794,339) in combination with either deBarbadillo, II et al. (4,962,085) or Yoshida (5,206,216) further in combination with Van Buskirk (5,653,806) further in combination with Reeves et al. (2005/0014653).

Weismann et al. (6,794,339) teaches synthesis of YBCO using sub-atmospheric processing. Weismann et al. (6,794,339) teaches forming crystalline YBCO that includes

forming a precursor film and heat treating at a temperature above 500°C in the presence of oxygen, nitrogen and water vapor at sub atmospheric pressures (abstract). Weismann et al. (6,794,339) teaches water vapor pressures of up to 25 Torr as well as a carrier gas such as nitrogen with the addition of oxygen (col. 2, lines 5-15). By products are swept out of the chamber in a more efficient manner (col. 2, lines 50-60). The growth rate ranges from 1-20 angstroms per second (col. 4, lines 20-22). The substrates on which the superconducting films are deposited on include nickel coated with a buffer of cerium oxide (col. 7, lines 10-20). Sub-atmospheric pressure of 1-760 Torr are utilized in the processing chamber (Fig. 4 and col. 8, lines 35-45.

Weismann et al. (6,794,339) fails to teach this process utilized in coating tapes.

DeBarbadillo, II et al. (4,962,085) teaches production of oxidic superconductors by zone oxidation of a precursor alloy. This oxidation post-treatment can be performed on a variety of substrate shapes including tapes, ribbons and wire (abstract, Fig. 1 and col. 1, lines 1-15).

Yoshida (5,206,216) teaches a method of fabricating oxide superconducting wires by laser ablation. The superconducting coating is applied to wires or tape-like substrates and post-treated in an oxygen atmosphere to form the superconductor coating (abstract and Fig. 3).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Weismann et al. (6,794,339) process by utilizing the process to form superconducting materials in tape/ribbon form as evidenced by deBarbadillo, II et al. (4,962,085) or Yoshida (5,206,216) with the expectation of achieving similar success.

Weismann et al. (6,794,339) in combination with either deBarbadillo, II et al. (4,962,085) or Yoshida (5,206,216) fail to teach the use of a showerhead to supply the oxygen/water vapor.

Van Buskirk (5,653,806) teaches using a showerhead-like discharge assembly for forming high temperature superconducting copper oxide films because the showerhead dispenser for the precursor mixture allows thorough mixing and homogeneity to be achieved in the interior volume of the disperser housing producing uniform vapors and a uniform deposited film (col. 4, lines 28-40).

Therefore it would have been obvious at the time the invention was made to have modified Weismann et al. (6,794,339) in combination with either deBarbadillo, II et al. (4,962,085) or Yoshida (5,206,216) process by incorporating showerhead to supply the oxygen/water vapor as evidenced by Van Buskirk (5,653,806) with the expectation of achieving similar success.

Weismann et al. (6,794,339) in combination with either deBarbadillo, II et al. (4,962,085) or Yoshida (5,206,216) further in combination with Van Buskirk (5,653,806) fail to teach the translating rate of 10 m/h.

Reeves et al. (2005/0014653) teaches a method of forming superconducting articles and XRD methods of characterizing the same. The deposition process includes PLD and CVD ([0037]). The translation rate of the tape substrate is 0.3 meters – 10 meters/h ([0063]).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Weismann et al. (6,794,339) in combination with either deBarbadillo, II et al. (4,962,085) or Yoshida (5,206,216) further in combination with Van Buskirk (5,653,806) semiconductor coating process by incorporating a translating speed of 10m/h as evidenced by Reeves et al. (2005/0014653) with the expectation of achieving similar success, i.e. a higher throughput.

With respect to claim 13 which recites a pumping system to remove by-products, it is noted that Weismann et al. (6,794,339) teaches by products being swept out of the chamber in a more efficient manner (col. 2, lines 50-60) and hence, the addition of a pumping system to perform this function would be within the skill of one practicing in the art.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weismann et al. (6,794,339) in combination with either deBarbadillo, II et al. (4,962,085) or Yoshida (5,206,216) further in combination with Van Buskirk (5,653,806) further in combination with Reeves et al. (2005/0014653) still further in combination with Manabe et al. (6,774,088) or Weinstein (6,083,885).

Weismann et al. (6,794,339) in combination with either deBarbadillo, II et al. (4,962,085) or Yoshida (5,206,216) further in combination with Van Buskirk (5,653,806) further in combination with Reeves et al. (2005/0014653) fail to teach the processing chamber having a dew point between 40-80°C.

Manabe et al. (6,774,088) teaches a rare earth barium copper compositions and method of producing superconductors. Manabe et al. (6,774,088) teaches dew point temperatures of 80°C when heating the superconducting precursor to form the superconductor. This can be done in reduced pressure (col. 4, lines 40-65 and Examples 2 and 4).

Weinstein (6,083,885) teaches method of forming textured high temperature superconductors. Weinstein (6,083,885) teaches REBCO superconductors where the precursors are heated in an oxygen atmosphere with a dew point in the range of 20°C-75°C (col. 11, lines 10-45).

Therefore it would have been obvious for one skilled in the art at the tie the invention was made to have modified Weismann et al. (6,794,339) in combination with either deBarbadillo, II et al. (4,962,085) or Yoshida (5,206,216) further in combination with Van Buskirk (5,653,806) further in combination with Reeves et al. (2005/0014653) process by performing the post-treatment having a dew point as claimed as evidenced by Manabe et al. (6,774,088) or Weinstein (6,083,885) with the expectation of achieving similar success.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weismann et al. (6,794,339) in combination with either deBarbadillo, II et al. (4,962,085) or Yoshida (5,206,216) further in combination with Van Buskirk (5,653,806) further in combination with Reeves et al. (2005/0014653) further in combination with Ott et al. (5,278,138).

Weismann et al. (6,794,339) in combination with either deBarbadillo, II et al. (4,962,085) or Yoshida (5,206,216) further in combination with Van Buskirk (5,653,806) further in combination with Reeves et al. (2005/0014653) fail to teach the processing chamber being a cold-walled chamber.

Ott et al. (5,278,138) teaches an aerosol CVD deposition of a metal oxide film. The metal oxide film can be superconductive coating such as YBCO (col. 3, lines 15-35). The reactors for which the process can take place include both cold-wall and hot-wall reactors (col. 5, lines 50-60).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Weismann et al. (6,794,339) in combination with either deBarbadillo, II et al. (4,962,085) or Yoshida (5,206,216) further in combination with Van

Buskirk (5,653,806) further in combination with Reeves et al. (2005/0014653) process chamber to be a cold-wall chamber as evidenced by Ott et al. (5,278,138) with the expectation of achieving similar success.

Response to Amendment

5. Applicant's arguments filed 4/27/09 have been fully considered but they are not persuasive.

Applicant argued that the primary reference teaches an "ex-situ" process whereby the secondary references teach an "in-situ" process and therefore combining the references would not be suggestive to produce the desired results.

The Examiner agrees in part. While the Examiner acknowledges the fact that the references teach different processes "in-situ vs. ex-situ", it is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable expectation of success despite the known differences between the two processes. Furthermore, the secondary references are relied upon for teaching process structure, i.e. apparatus such as cold wall chamber and showerhead which benefits would be expected to be garnered from either process. The modification of a tape substrate, rate of translation of tape and dew point in the chamber are parameters not critical to the production of a superconductive coating and would have been within the skill of one practicing in the art to "optimize" these parameters to produce the desired final product taking into consideration the type "ex-situ and in-situ" process utilized.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 8AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian K Talbot/
Primary Examiner, Art Unit 1792

BKT